

# Screening for and Management of Obesity in Adults: U.S. Preventive Services Task Force Recommendation Statement: A Policy Review

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## Introduction

The United States Preventive Services Task Force (USPSTF) has recently released an updated, evidence-based, recommendation for the screening and management of obesity in adults.<sup>1</sup> These new recommendations reinforce the significant impact of obesity upon health services, and raise critical questions concerning the future of its management in reducing long-term sequelae. Although the remit of the recommendations lie within the US, they should be considered in the context of the global nature of obesity.<sup>2</sup> These new USPSTF guidelines stress important themes applicable to obesity management policies and guidelines worldwide.

This article aims to summarise the findings and recommendations outlined by the USPSTF, including its strengths and limitations. These will be considered in the context of respective recommendations from the American Heart Association (AHA)<sup>3</sup> and the American Medical Association, and internationally from the UK's National Institute for Health and Clinical Excellence (NICE),<sup>4</sup> 2006 Canadian clinical practice guidelines,<sup>5</sup> Australia's National Health and Medical Research Council (NHMRC),<sup>6</sup> and the World Health Organisation (WHO).<sup>7</sup>

## Rationale

The USPSTF previously provided guidelines for the screening of obesity in adults in their 2003 recommendations.<sup>8</sup> The Centre for Disease Control's Healthy People 2010 objectives were originally defined in 2001. However, the 2011 Final Review of these objectives reported that almost no progress had been made towards the focus area of nutrition and obesity in the last decade. Obesity levels remain in excess of 30% of the population in the USA,<sup>9</sup> despite aims to reduce these levels to less than 15%.<sup>10</sup> Obesity has been associated with numerous adverse health effects including increased mortality from ischaemic heart disease, diabetes, respiratory disease, and certain types of cancer.<sup>11</sup> The management of these co-morbidities also poses a considerable economic burden.<sup>12</sup> The USPSTF 2012 recommendations for screening and management of obesity in adults represent an update on the 2003 recommendation statement based on the most recent evidence base.<sup>1</sup>

## Method

The 2012 update focuses on non-surgical interventions. Two independent investigators appraised 6498 abstracts and 648 articles from searches of MEDLINE, Cochrane Central Register, and PsycINFO databases from January 2005 to September 2010. NICE systematic reviews on behavioural interventions and weight loss (2006), and metformin (2008) were relied on to cover the search window from the previous

USPSTF 2003 guideline and the current review. Thirty three new trials of behaviour interventions were identified, 16 involving orlistat plus behavioural interventions, and three involving metformin plus behavioural interventions (a total of 27,403 participants).<sup>11</sup> However, no new trials were identified comparing screening for obesity in adults with no screening. In addition, many studies could not be pooled due to insufficient reporting of variance data.<sup>13</sup>

## Findings

The USPSTF found that the most effective behavioural interventions were comprehensive and of high intensity; defined as 12 to 26 sessions of behavioural management activity in a year. High intensity behavioural intervention resulted in weight loss and a reduction in the incidence of diabetes, as well as improvement in glucose tolerance, blood pressure, and waist circumference. The guideline committee also found a lack of evidence regarding maintenance of weight loss after discontinuation of pharmacological treatment with orlistat, sibutramine, or metformin.

## Recommendations

Two main recommendations were made based on the findings. First, it is recommended that clinicians should screen

adults for obesity. This should be done using the BMI measurement with obesity defined as a BMI of 30kg/m<sup>2</sup> or higher.<sup>2</sup> The rationale was to provide a simple screening tool that has the potential to identify at-risk individuals for early intervention. Screening for obesity is supported by WHO recommendations,<sup>7</sup> as well as the National Heart Lung and Blood Institute (NHLBI),<sup>14</sup> and the Canadian Task Force on Preventative Health Care.<sup>5</sup>

However, the evidence base for the benefit of screening on long-term health outcomes is limited. There remains a lack of trials comparing obesity screening in adults with no screening. Similarly, no trials have evaluated the benefit of mass screening for obesity over opportunistic screening.<sup>15</sup> There is no direct evidence that behavioural interventions in screened populations lower mortality or morbidity from obesity. Trials have only evaluated surrogate outcomes such as improved glucose metabolism, lipid levels, and blood pressure. Therefore, the USPSTF recommends screening with grade B evidence (moderate certainty or moderate benefit).<sup>1</sup> These recommendations do not consider cost-effectiveness in contrast with current NICE guidelines.<sup>4</sup> NICE conclude that there is insufficient evidence for the benefit of opportunistic screening of obesity in adults or children, reflecting the UK National Screening Committee policy.<sup>16</sup>

Furthermore, the guideline committee did not evaluate the accuracy of screening tests beyond that of BMI, originally investigated in 2003. The AHA, NICE, Canadian Task Force on Preventative Healthcare, NHMRC, and WHO recommend the use of at least one additional measure such as waist to hip ratio, waist to height ratio, or waist circumference, as BMI does not consider factors such as an individual's relative muscle and fat mass.<sup>3,4,6,7,17</sup> Measurements such as waist circumference correlate with abdominal fat, and increased risk of metabolic and chronic heart diseases.<sup>14</sup>

Finally, no recommendations were made on the intervals of screening due to a lack of evidence of interval times.

The second recommendation was that clinicians should offer or refer patients with a BMI >30 kg/m<sup>2</sup> to intensive, multi-component, behavioural interventions. These recommendations represent an extension to the 2003 guidelines, highlighting the need for intensive counselling, rather than a major change in recommendation. This recommendation was drawn from data by LeBlanc *et al.* who reported that counsel therapy had consistent efficacy in reducing patient weight.<sup>11</sup> Participants lost an average of 6% of their baseline weight (4–7 kg) in the first year of interventions, meeting the WHO-defined primary goal of long-term weight loss maintenance (weight loss of 5–15%).<sup>1</sup>

The suggested multi-component interventions included a community-focused approach to: behavioural management activities such as setting weight-loss goals; improving diet or nutrition, and increasing physical activity; addressing barriers to change; self-monitoring; and strategising how to maintain lifestyle changes. This more holistic approach to obesity management has been a central feature of many guidelines.<sup>4,7</sup> The AHA statement adds that obesity management should be patient-centred, tackle individual and social barriers to change, and take into account patients' levels of readiness and compliance;<sup>3</sup> a theme also reflected in NICE guidelines.<sup>18</sup> The NHMRC recommends behaviour intervention with nutrition and physical activity integrated into all weight loss programmes.<sup>6</sup>

However, the recommendation is limited by the lack of good quality evidence for the benefit of behavioural interventions on long-term health outcomes such as mortality,

cardiovascular disease, and hospitalisation. The USPSTF defines "Good" quality evidence as evidence that includes consistent results from well-designed, well-conducted studies in representative populations that directly assess effects on health outcomes. Only 24% of trials reviewed in the 2003 summary were reported as good quality.<sup>15</sup> The remainder of these trials were reported as fair quality. The USPSTF defines "Fair" quality evidence as evidence sufficient to determine effects on health outcomes, but the number, quality, or consistency of individual studies; generalisability to routine practice; or the indirect nature of the evidence on health outcomes limits the strength of the evidence. Regarding trials since 2003, there was an average of 4–7 kg of weight loss reported (6% of baseline weight). However, the guideline committee was not able to identify which of the multi-component interventions was responsible for the weight loss. The behavioural interventions resulted in improved fasting glucose (reduction of 5.3 mg/dL), and in two trials, decreased diagnoses of diabetes over 2–3 years (31% reduction in incidence), but had only a minimal effect on lipid levels, blood pressure, and waist circumference.<sup>11</sup> Of these reviewed trials, most only maintained patient follow-up for 12 to 16 months.

In addition to the two main recommendations, the USPTSF concluded there was insufficient evidence to recommend the use of pharmacological interventions. The guideline committee highlighted the high prevalence of side effects from the use of sibutramine and orlistat as well as concerns regarding severe liver disease and lack of long-term safety data. High rates of attrition, and a lack of post-continuation data were also identified as limitations to medication trials.<sup>13</sup> Additionally, the USPSTF found no evidence for the maintenance of improved weight loss after discontinuation of these medications.<sup>11</sup>

In spite of similar evidence for the efficacy of pharmacological intervention on weight loss, the lack of recommendation for these interventions by the USPSTF stands in contrast to the guidelines of other countries. The USPSTF should follow these other guidelines in clearly defining the limits to their recommendations, accounting for the risk of side-effects and lack of long term information. NICE guidelines suggest orlistat should only be considered when dietary, exercise, and behavioural approaches have been attempted and evaluated.<sup>18</sup> Alternatively, they should be considered for patients who have not reached their target weight loss or have reached a plateau with dietary, exercise, and behavioural approaches. Although NICE does acknowledge that orlistat is associated with some gastro-intestinal side-effects, these are considered mild and transient. Similarly, the NHLBI recommends pharmacological intervention when combined with appropriate diet and physical activity in those with a BMI  $\geq$ 30kg/m<sup>2</sup> if no obesity-related risk factors are present (or  $\geq$ 27kg/m<sup>2</sup> if risk factors present).<sup>14</sup> Both NICE and the NHLBI recommend immediate cessation of pharmacological interventions in cases where they prove ineffective at reducing weight loss, or where significant side-effects are experienced. Pharmacological interventions are also recommended by the NHMRC,<sup>6</sup> and in the 2006 Canadian clinical guidelines.<sup>5</sup>

Finally, it is important to recognise a number of important omissions in the USPSTF recommendations. Unlike those provided by NICE and NHMRC, the USPSTF recommendations are not stratified according to the class of obesity. The WHO defines obesity according to BMI: obese class 1 (BMI 30–34.9 kg/m<sup>2</sup>); obese class 2 (BMI 35–39.9 kg/m<sup>2</sup>); obese class 3 (BMI  $\geq$  40.0 kg/m<sup>2</sup>).<sup>19</sup> These classes correspond to moderate, severe, and very severe risk of co-morbidity

respectively – particularly diabetes and hypertension. Both NICE and NHMRC offer a spectrum in the intensity of obesity management reflecting the severity of co-morbidity risk.<sup>6,18</sup> The USPSTF was not able to stratify the recommendations according to BMI due to lack of delimitation within the trials evaluated. Although some were in the overweight group, the mean BMI across trials was in the obese range (BMI  $\geq$ 30 kg/m<sup>2</sup>). NICE and NHMRC also recommend pharmacological and surgical interventions based on BMI. The USPSTF reviewed trials involving orlistat, and metformin although they were not incorporated into the recommendations. While the benefit of surgical interventions was reviewed in the 2003 evidence summary for obesity screening and interventions, no recommendations were made. The 2012 update reviewed only “non-surgical” weight loss interventions. In contrast, NICE recommends considering surgery in obese class 3 individuals with other significant disease (e.g. type 2 diabetes and high blood pressure) that could be improved if they lost weight. Obese class 2 individuals may be considered in the presence of significant disease. NICE suggests considering surgery as first-line option for those with BMI  $\geq$ 50kg/m<sup>2</sup>. Surgical interventions also affect outcome measures of important co-morbidities. A recent randomised control trial identified a benefit of bariatric surgery plus medical therapy over medical therapy alone in glycaemic control in type 2 diabetes patients.<sup>20</sup>

The current recommendations do not address the effectiveness of screening for overweight (pre-obese) individuals defined as BMI 25–29.9 kg/m<sup>2</sup>,<sup>2,19</sup> despite an associated increase in the co-morbidity risk. A literature review by members of the Expert Panel of the National Institutes of Health and Canadian Task Force on Preventative Health Care suggests considering multicomponent interventions for adults with BMI greater than 27 kg/m<sup>2</sup> in the presence of co-morbid medical conditions.<sup>14</sup>

The external validity of the current USPSTF recommendations remains limited by the lack of sex and ethnic diversity in the trials. Screening in Asian populations may benefit from alternative limits for BMI classification of overweight and obesity due to the high prevalence of co-morbidities such as hypertension and diabetes.<sup>21</sup> The 2006 Canadian clinical practice guidelines provide ethnic group-specific values for waist-circumference as a measure of central obesity. The effect of behavioural intervention on obesity may also vary between ethnic groups due to the prevalence of these co-morbidities.<sup>22</sup>

The USPSTF recommendation does not consider the cost of the interventions in their recommendation. A cost-benefit analysis is indicated especially given the lack of evidence identifying the benefit of each specific intervention in the multicomponent approach. Likewise, cost-effectiveness of screening was not evaluated despite being on the criteria in the WHO’s Principles and Practice of Screening for Disease.<sup>23</sup> Furthermore, those responsible for funding interventions are not identified. Recommendations in UK guidelines similarly demonstrate a general paucity in their ability to translate evidence appraisal into a detailed implementation strategy.<sup>24</sup>

No time frame was provided for the implementation of these recommendations. Guidelines take time for the necessary infrastructure, training, and equipment to be established. In 2010, the US Department of Health and Human Services launched new 2020 Healthy People objectives which included a reduction of the proportion of obese adults in the US to 30.6% by 2020 (10% reduction on the 2005–2008 figure).<sup>25</sup>

## Conclusion

The USPSTF recommendations highlight a number of important challenges in developing strategies against a growing obesity epidemic. The current guidelines underline a central theme: an integrated multi-component, behavioural approach, rather than a surgical or pharmacological approach. Effective management of obesity requires involvement from both primary health care workers such as GPs, nurses, and community dietitians, as well as secondary care workers. Community-based programmes provide potential for individualised care.

However, major areas need to be addressed concerning recommendations in screening and management of obesity. Firstly, gaps in the evidence base should be addressed. This includes the effect of obesity screening and intense behavioural intervention on long term health outcome, the best method of screening, and when to screen. Secondly, the scope of the recommendations should be extended. This includes stratifying recommendations to obesity class and recommendations for individuals classified as overweight (pre-obese). The benefit of pharmacological and surgical interventions should be integrated as appropriate for these respective groups. Additionally, the effects of ethnicity, sex, and age should be considered when formulating recommendations. Finally, further detail in the strategy of implementation is required. The costs and sources of funding of interventions should be considered on the background of their evidence base. More specificity is also required regarding who is responsible for the monitoring of implementation, and the time scale of implementation.

## Ethical approval

No ethical approval required for this study.

## Conflicts of interest

No conflicts of interest have been declared by the author.

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Single author manuscript.

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